

### **REMARKS/ARGUMENTS**

Favorable reconsideration and allowance of the present application are respectfully requested in view of the following remarks.

#### **A. SUMMARY OF THIS AMENDMENT**

By the current amendment, Applicants:

1. Editorially amend the specification.
2. Editorially amend claims 1, 6 and 8.
3. Add new claims 10 and 11.
4. Respectfully traverse all prior art rejections.

#### **B. PATENTABILITY OF THE CLAIMS**

This is in response to the Office Action dated October 9, 2007. Claims 1-6 and 8 are pending. Claims 1-6 and 8 stand rejected. Claims 1, 6 and 8 have been editorially amended. New claims 10-11 have been added.

Applicant thanks the Examiner for consideration of the Information Disclosure Statements filed September 7, 2004.

The Examiner's acknowledgment of the application's claim to foreign priority is appreciated.

The rejection of claims 1-6 and 8 as allegedly being anticipated by Nakai et al. (U.S. Patent 6,207,890) is respectfully traversed. The Applicant submits that Nakai et al. fails to disclose or even remotely suggest each and every limitation set forth in the claims. In order for the Examiner to set forth a viable rejection based on anticipation, it is necessary that "each and every element as set forth in the claim is found, either

expressly or inherently described, in a single prior art reference”, *Vedregaal Bro. v. Unio Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). (MPEP § 2131).

Nakai et al. generally discloses a photoelectric device (see Fig. 11) comprising an n-type substrate 1, which has convex and concave portions formed on its top surface. An intrinsic semiconductor layer 2 is formed on top of the substrate 1. Subsequently, a p-type semiconductor layer 3 is formed on layer 2, followed by a front electrode 4 formed on top of the p-type semiconductor layer 3. The Examiner has identified layer 2, the intrinsic semiconductor, as the claimed second conductivity type semiconductor layer of claim 1. Furthermore, it is alleged that layer 2 is in partial contact with the front electrode 4.

It is respectfully submitted that Nakai et al. does not anticipate claim 1 because he fails to disclose or suggest “A photoelectric conversion device, [wherein] the second conductivity type semiconductor layer being partially in contact with the front electrode and becoming thinner as it goes farther from the contacted area”. It is clear from Fig. 11, that the front electrode 4 is not in contact with the second conductivity type semiconductor layer 2, as there exists an intervening layer 3 between layer 2 and layer 4.

Even if it is argued by the Examiner that layer 3 represents the second conductivity type semiconductor layer this would still not meet all the limitations of claim 1 for the following reasons: a) in the device of Fig. 11, the p-type layer 3 is not

“formed on the surface of the first conductivity type semiconductor substrate”; since an intervening layer 2 is formed between substrate 1 and layer 3 and b) the first electrode 4 would not be in partial contact with layer 3, since the electrode 4 is in full contact with layer 3 (being formed on top of the whole layer 3).

In rejecting the method claim 6, the Examiner referred to embodiments of a photoelectric device that are represented by Figures 4, and 6-8 in Nakai et al. In the above embodiments, uneven sections of a pyramid shape are formed on the front surface of the n-type substrate 1 by anisotropic etching (Fig. 4, line 56, col. 9 to line 2, col. 10). The Examiner referred to lines 34-39, col. 10 as allegedly teaching the limitation that a film/resist serving as a barrier against impurity diffusion is formed on the semiconductor substrate having convex and concave portions. However, said passage in Nakai et al. refers to “coating the back surface of the substrate 1 with resist”. Furthermore, “the bottom b of the uneven section on the front surface of the substrate is rounded”. It is respectfully submitted that the above does not teach forming a “film serving as a barrier against impurity diffusion on a semiconductor substrate having convex and concave portions formed on its surface in such a manner that the film becomes thicker from the convex portion to the concave portion” as claimed in claim 6. The whole point of the fabrication method of Nakai’s device is that “The shape of the surface of the substrate (1) after isotropic etching is such that the bottoms of the recessed sections are slightly rounded and therefore the amorphous silicon layer can be deposited in a uniform

thickness”, see Abstract (emphasis added). In other words, the intrinsic amorphous silicon layer 2 has uniform thickness, and therefore, there is no layer with uneven thickness formed on the surface of the semiconductor substrate.

Regarding claim 8, the Examiner referred to lines 5-10, col. 11, as allegedly providing the limitation of forming a film containing second conductivity type impurities (2) on a semiconductor substrate (1) (shown in Fig. 6) having convex and concave portions formed on its surface in such a manner that the film becomes thicker from the convex portion to the concave portion. However, said passage in Nakai et al. refers to “an intrinsic amorphous silicon layer 2 and a p-type amorphous silicon layer 3 [being] formed on the front surface of the substrate 1 having uneven sections by a plasma CVD method”. It is respectfully submitted that the phrase “having uneven sections” simply refers to the shape of the substrate 1 having peaks and valleys, and not a layer formed on the substrate having uneven thickness. All the layers in the device of Nakai et al. have uniform thickness, and there is no film formed such that the film becomes thicker from the convex portion to the concave portion.

Claims 2-5, 10-11 all depend from independent claim 1. Since Nakai et al. does not anticipate claim 1, as explained above, it is respectfully submitted that the rejection of said claims be withdrawn.

**C. MISCELLANEOUS**

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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